Air Force Space Command Turns to Wind Power

by Mr. Quinn Hart
HQ AFCESA

Air Force Space Command is using wind power as a low-tech energy source to help operate a high-tech missile and satellite tracking station on Great Britain's Ascension Island.

The tracking station uses wind power to help conserve fuel oil, a precious commodity for an island located 500 miles south of the Equator in the middle of the Atlantic Ocean.

Electricity for the station is primarily provided by fuel oil-fired generators. To reduce fuel oil consumption, AFSPC took advantage of the Defense Department's Energy Conservation Investment Program (ECIP) and installed four 225-kilowatt wind generators to supplement the station's power requirements. The ECIP funds military construction programs primarily intended for energy conservation.

Fueling Ascension Island

4,000 acres leased from the United Kingdom
Average wind speed = 17 mph
Annual fuel use before wind turbines was 1.3 million gallons
Fuel use with four 225 kilowatt wind turbines is 1 million gallons
Fuel savings: $350,000 per year (39.8 billion BTUs)

Wind-generated power is fed onto the station's high-voltage electrical distribution system. A unique feature allows the wind machines to provide electrical production even at low wind levels. Instead of standing idle, the turbines slip into a mode that generates 40 kilowatts instead of the usual 225 kilowatts.

The Air Force is actively pursuing the use of wind generators, such as these on Ascension Island, at Air Force bases throughout the world. *(Photo courtesy HQ Air Force Space Command)*

The wind generators, built in 1996, have lowered fuel use by 287,000 gallons (39.8 billion BTUs) which equates to a savings of $350,000 annually. The project also reduces carbon dioxide and nitrous oxides by 2.8 million and 98,000 pounds, respectively, each year.

The project, completed in only six weeks, cost $3.1 million. A life-cycle cost analysis projects it will pay for itself in less than nine years.

"Because the project is so successful, AFSPC is submitting another ECIP project for an additional 1,500 kilowatts of wind generation that will supplement the current system on Ascension Island," said Mr. Craig Miller, Air Force Space Command facility energy manager. That project will cost $4.6 million and will produce an annual savings of about 65 billion BTUs and $485,000.

Since the ECIP began in 1991, the Air Force has completed 66 projects at a cost of more than $94 million, with energy savings of approximately $21 million per year.

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Editor's Note: The Air Force is actively pursuing the use of wind generation for Air Force bases throughout the world. Wind generation costs per kilowatt-hour have become very competitive with fossil- and gas-fired generation costs in many parts of the country. Emphasis for the short term has been on purchasing generation from existing wind farms or wind farms now under construction. For the long term, the Air Force is planning to build, or have a third party build, wind farms on bases that have the right wind and environmental characteristics.

CE Magazine Fall 2001

One Air Force, One Portal, One Civil Engineer Community

by Peter Cerauskis
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In the spring of 2000, the Air Force logistics community began an effort to prototype a web-based portal, much like My Yahoo, using a commercial off-the-shelf product. The idea was to give logistics folks a web tool that would give them access to all the tools they normally use in their daily job. During the summer, the Secretary of the Air Force visited industry leaders and, as a result, recommended the logistics portal concept be expanded to serve as the Air Force portal.

The prototype portal was demonstrated at Corona Fall, receiving rave reviews. Things began to happen quickly after that. The Air Force portal effort moved onto the fast track and began to accelerate at dot.com speeds. The portal concept was moved under the Global Combat Support System (GCSS-AF) umbrella and was designated the presentation layer of the GCSS-AF Integration Framework (IF). This officially moved the Air Force into the web environment. The Secretary of the Air Force stated that, as one of the Air Force goals, all unclassified combat/mission support and service applications would be available through the single Air Force portal by July 1, 2001. We had to hustle.

So, what does this all mean? Today, when you come to work, you turn on your computer and log onto the network. Your desktop appears with some, or a lot of, icons and shortcuts. You open your e-mail, check your calendar and begin your daily routine. At some point you log into the Automated Civil Engineer System (ACES). Maybe then you log into the Automated Business Services System (ABSS), the Standard Base Supply System (SBSS) or one of the numerous other systems we all work with.

Soon, when you come to work, you'll turn on your computer and log onto the network. Your browser will open and you'll log into the Air Force portal. You'll check your e-mail and calendar from the portal. Now that you have your coffee, you begin your day. You click on your ACES icon and start work. Next you click on the SBSS icon and work there. Notice, I never indicated you logged into another system? That's because the portal will provide you a single logon for all those systems. No longer will you need to remember all those other login IDs and passwords you use now. Nor will you be concerned with whether or not you are running the correct version of software. Because you are using your web browser for the job, you and everyone else will always be running the same version — the most current one.

The Air Force portal will provide a worldwide window into integrated, self-service, web-enabled information and capabilities. It will be accessible anytime, anywhere and serve as the primary point of access for all Air Force personnel to individual, functional and operational services. It will also take advantage of the smart technologies incorporated in GCSS-AF to optimize information dissemination. Like most websites today, you can set up your Air Force portal homepage to meet your needs.

Are we there yet? No, but we're stepping out smartly. The Air Force Civil Engineer Support Agency is working with Standard Systems Group (SSG) to migrate ACES to a web environment and link it to the Air Force portal. ACES Program Management (ACES-PM) is the first module to be web-enabled. With funding support from the Headquarters U.S. Air Force Directorate of Plans and Integration, Information Systems Integration Division, we have moved ACES-PM into the web environment and linked it through the Air Force portal. Our next step is to move ACES Housing and Real Property modules to the portal when we implement the single logical data model in February 2002. New ACES modules under development will be developed as web-based applications and fielded through the portal.

How do you get to the Air Force portal? The URL for the portal is: https://my.af.mil. You must have an account and password in order to gain access to the portal and all the functionality it provides. Your local communications squadron can help you. Once you log in, you can add shortcuts to the programs you use on your local personal computer, change color schemes, add links to web pages, and join web communities of interest to you.

We have developed a civil engineer community on the portal which will be home for CE automation systems, as well as provide document sharing, threaded discussions [like an old bulletin board, where groups of people can interchange documents or have a group discussion in writing], and a CE community calendar. Here you can currently find links to the Office of The Civil Engineer, Air Force Center for Environmental Excellence and AFCESA web pages, the Installation Readiness Capability Assessment Tool (IRCAT), and ACES-PM.

We are always looking for new ideas. We are considering linking the *Air Force Civil Engineer* magazine, major command CE, and The Society of American Military Engineer (SAME) and other professional societies' web sites to the portal through our community page. Now is the time to get started!

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